

AMENDMENTS TO THE DRAWINGS

Please amend the drawings as follows. Please replace the drawing sheet containing FIG. 7 with the replacement drawing sheet attached hereto.

REMARKS

Prior to entry of the instant amendment, claims 1-17, 19, 24, 28-45, 50, 51 and 53-67 are pending in the instant application, of which claims 2, 7, 9, 11, 16, 28-45, 50, 51 and 61-67 have been withdrawn. By the instant amendment, drawing FIG. 7 is amended, the specification is amended, claims 1 and 28 are amended, claims 12-16, 41-44 and 51 are canceled, and claim 68 is added. Claims 1 and 28 are independent.

Claims 1, 3-6, 8, 10, 17, 19, 24, 53-60 and 68 are presented to the Examiner for further or initial prosecution on the merits.

A. Introduction

In the outstanding Office Action Made Final, the Examiner objected to the drawings under 37 C.F.R. § 1.83(a); rejected claims 1, 3-6, 8, 10, 12-15, 17, 19, 24 and 53-60 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement; rejected claims 1, 4, 6, 8, 10 and 53-59 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,408,204 to Hirschman (“the Hirschman reference”) in view of U.S. Patent No. 3,871,359 to Pacela (“the Pacela reference”); rejected claims 3 and 5 under 35 U.S.C. § 103(a) as being unpatentable over the Hirschman reference as modified by the Pacela reference and further in view of U.S. Patent No. 5,114,424 to Hagen et al. (“the Hagen et al. reference”); rejected claims 1, 15, 53 and 54 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,957,037 to Fletcher et al. (“the Fletcher et al. reference”) in view of the Pacela reference; rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over the Fletcher et al. reference as modified by the Pacela reference and further in view of U.S. Patent No. 5,810,762 to Hofmann (“the Hofmann reference”); rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,895,163 to Libke et al. (“the Libke et al. reference”) in view of the Pacela reference; rejected claim 17 under

35 U.S.C. § 103(a) as being unpatentable over the Libke et al. reference as modified by the Pacela reference and further in view of U.S. Patent No. 4,917,093 to Dufresne et al. (“the Dufresne et al. reference”); rejected claims 1 and 24 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,372,141 to Gallup et al. (“the Gallup et al. reference”) in view of the Pacela reference; rejected claims 1 and 60 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,292,691 to Petrucelli et al. (“the Petrucelli et al. reference”) in view of the Pacela reference; rejected claims 1, 19 and 60 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,578,635 to Mee et al. (“the Mee et al. reference”) in view of the Petrucelli et al. and Pacela references; rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0176808 to Masuo (“the Masuo reference”) in view of the Pacela reference; rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over the Masuo reference as modified by the Pacela reference and further in view of the Fletcher et al. reference; and rejected claims 12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over the Masuo reference as modified by the Pacela and Fletcher et al. references, and further in view of the Hofmann reference.

On February 26, 2007, applicants filed an amendment after final that included amendments to the claims and arguments addressing each of the objections and rejections set forth the outstanding Office Action Made Final. On April 10, 2007, the Examiner issued an Advisory Action in which the Examiner indicated that applicants’ February 26th amendments would not be entered, and in which the Examiner responded to applicants’ February 26th arguments.

B. Objection to the Drawings

In the outstanding Office Action Made Final, the Examiner objected to the drawings under 37 C.F.R. § 1.83(a). In particular, the Examiner asserted, “the combined limitations of claim 14 [*sic*, 13] must be shown in the same embodiment,” and further asserted, “the new figure 7 is redundant and fails to show two electrode distance adjusters that are separated from each other by a predetermined distance and are perpendicular to each other as set forth in claim 13.”¹ In the Advisory Action, the Examiner restated this objection, asserting, “[the] combination of two distance adjusters as set forth in claim 13 must be shown in a single drawing. . . . none of the figures show two stationary screw lines seperated from each other by a predetermined distance and perpendicular to each other.”²

As an initial matter, applicants note that claims 12 and 13 has been cancelled by the instant amendment, and the subject matter thereof has been incorporated into independent claim 1. Additionally, withdrawn claims 42 and 43, which recite subject matter similar to that recited in claims 12 and 13, have been cancelled, and the subject matter thereof has been incorporated into withdrawn independent claim 28.

By the instant amendment, applicants have amended drawing FIG. 7 to show the two distance adjusters presently recited in claims 1 and 28. No new matter is added, and support for the amendment to drawing FIG. 7 can be found in the application as originally filed, e.g., in original claims 13 and 43, and in paragraph [0045] of the specification. Drawing FIG. 7, as presently amended, illustrates the distance adjusters separated from each other by a predetermined distance and perpendicular to each other. Accordingly, applicants request that this objection be reconsidered and withdrawn.

¹ Office Action Made Final mailed October 30, 2006, paragraph no. 2, page 2.

² Advisory Action mailed April 10, 2007, continuation sheet.

C. Rejection under 35 U.S.C. § 112, First Paragraph

In the outstanding Office Action Made Final, the Examiner rejected claims 1, 3-6, 8, 10, 12-15, 17, 19, 24 and 53-60 under 35 U.S.C. § 112, first paragraph, asserting that the amendment to claim 1 that was filed on August 14, 2006, introduced new matter, and asserting that claim 1 therefore fails to comply with the written description requirement.³ In particular, the Examiner admitted, “the original disclosure appears to provide support for supplying a constant current,” but asserted, “the original disclosure does not appear to provide sufficient support for supplying a direct current.”⁴ In the Advisory Action, the Examiner restated this rejection, asserting,

Applicant requests that the outstanding 35 USC 112, first paragraph rejection be withdrawn because the specification as originally filed, describe measurement of the accurate DC level of a signal. . . . In response, it is respectfully submitted that a DC level of a signal can be accurately measured even when the applied constant current is not a DC current. For example, a DC component of a signal can be accurately measured even when an AC current is applied.

(Advisory Action mailed April 10, 2004, continuation sheet).

Applicants submit that this rejection is traversed as to claims 12-15, because these claims are cancelled by the instant amendment. With regard to the rejection of the remaining claims, by the instant amendment, independent claim 1 has been amended to restore the term --direct current--, as originally recited therein. Accordingly, applicants respectfully submit that there is no basis for the Examiner to maintain this rejection. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

³ The amendment filed August 14, 2006, amended claim 1 by replacing the term “constant current” with the term --constant direct current--.

⁴ Office Action Made Final mailed October 30, 2006, paragraph no. 4, page 3.

D. Asserted Obviousness Rejection of Claims 1, 4, 6, 8, 10 and 53-59

In the outstanding Office Action Made Final, the Examiner rejected claims 1, 4, 6, 8, 10 and 53-59 under 35 U.S.C. § 103(a) as being unpatentable over the Hirschman reference in view of the Pacela reference. Applicants respectfully traverse this rejection for at least the reasons set forth below.

By the instant amendment, claim 1 is amended to incorporate the subject matter of claims 12 and 13. Claim 1 presently recites, *inter alia*,

the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other . . .

Applicants respectfully submit that neither the Hirschman reference nor the Pacela reference teaches or suggests the screw line configuration as claimed in claim 1. Further, claims 4, 6, 8, 10 and 53-59 depend from independent claim 1, and are therefore believed to be allowable for at least the reasons that claim 1 is allowable. Accordingly, applicants respectfully request that this rejection be reconsidered and withdrawn.

E. Asserted Obviousness Rejection of Claims 3 and 5

In the outstanding Office Action Made Final, the Examiner rejected claims 3 and 5 under 35 U.S.C. § 103(a) as being unpatentable over the Hirschman reference as modified by the Pacela reference and further in view of the Hagen et al. reference.

Claims 3 and 5 depend from independent claim 1, and applicants respectfully submit that the Hagen et al. reference fails to provide the teachings noted above as missing from the Hirschman and Pacela references. Therefore, claims 3 and 5 are believed to be allowable for at least the reasons set forth above regarding claim 1. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

F. Asserted Obviousness Rejection of Claims 1, 15, 53 and 54

In the outstanding Office Action Made Final, the Examiner rejected claims 1, 15, 53 and 54 under 35 U.S.C. § 103(a) as being unpatentable over the Fletcher et al. reference in view of the Pacela reference. Applicants submit that this rejection is traversed as to claim 15, because this claim is cancelled by the instant amendment.

Further, as discussed above, claim 1 is presently amended to incorporate the subject matter of claims 12 and 13. Applicants respectfully submit that the proposed combination of the Fletcher et al. and Pacela references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1. Accordingly, claim 1 is believed to be allowable over the Fletcher et al. and Pacela references. Claims 53 and 54 depend from claim 1 and are believed to be similarly allowable. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

G. Asserted Obviousness Rejection of Claim 14

In the outstanding Office Action Made Final, the Examiner rejected claim 14 under 35 U.S.C. § 103(a) as being unpatentable over the Fletcher et al. reference as modified by the Pacela reference and further in view of the Hofmann reference. Applicants submit that this rejection is traversed, because claim 14 is cancelled by the instant amendment. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

H. Asserted Obviousness Rejection of Claim 1

In the outstanding Office Action Made Final, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over the Libke et al. reference in view of the Pacela reference. As discussed above, claim 1 is presently amended to incorporate the subject

matter of claim 13. Applicants respectfully submit that the proposed combination of the Libke et al. and Pacela references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1. Accordingly, claim 1 is believed to be allowable over the Fletcher et al. and Pacela references. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

I. Asserted Obviousness Rejection of Claim 17

In the outstanding Office Action Made Final, the Examiner rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over the Libke et al. reference as modified by the Pacela reference, and further in view of the Dufresne et al. reference.

Claim 17 depends from independent claim 1, and applicants respectfully submit that the Dufresne et al. reference fails to provide the teachings noted above as missing fro the Libke et al. and Pacela references. Therefore, claim 17 is believed to be allowable for at least the reasons set forth above regarding claim 1. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

J. Asserted Obviousness Rejection of Claims 1 and 24

In the outstanding Office Action Made Final, the Examiner rejected claims 1 and 24 under 35 U.S.C. § 103(a) as being unpatentable over the Gallup et al. reference in view of the Pacela reference. As discussed above, claim 1 is presently amended to incorporate the subject matter of claim 13. Applicants respectfully submit that the proposed combination of the Gallup et al. and Pacela references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1.

Accordingly, claim 1 is believed to be allowable over the Gallup et al. and Pacela references.

Claim 24 depends from claim 1 and is believed to be similarly allowable. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

K. Asserted Obviousness Rejection of Claims 1 and 60

In the outstanding Office Action Made Final, the Examiner rejected claims 1 and 60 under 35 U.S.C. § 103(a) as being unpatentable over the Petrucelli et al. reference in view of the Pacela reference. As discussed above, claim 1 is presently amended to incorporate the subject matter of claim 13. Applicants respectfully submit that the proposed combination of the Petrucelli et al. and Pacela references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1.

Accordingly, claim 1 is believed to be allowable over the Petrucelli et al. and Pacela references. Claim 60 depends from claim 1 and is believed to be similarly allowable. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

L. Asserted Obviousness Rejection of Claims 1, 19 and 60

In the outstanding Office Action Made Final, the Examiner rejected claims 1, 19 and 60 under 35 U.S.C. § 103(a) as being unpatentable over the Mee et al. reference in view of the Petrucelli et al. reference and the Pacela reference. As discussed above, claim 1 is presently amended to incorporate the subject matter of claim 13. Applicants respectfully submit that the proposed combination of the Mee et al. and Petrucelli et al. references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1. Accordingly, claim 1 is believed to be allowable over the Mee et al. and Petrucelli et al. references. Claims 19 and 60 depend from claim 1 and are

believed to be similarly allowable. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

M. Asserted Obviousness Rejection of Claim 1

In the outstanding Office Action Made Final, the Examiner rejected claim 1 under 35 U.S.C. § 103(a) as being unpatentable over the Masuo reference in view of the Pacela reference. As discussed above, claim 1 is presently amended to incorporate the subject matter of claim 13. Applicants respectfully submit that the proposed combination of the Masuo et al. and Pacela references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1. Accordingly, claim 1 is believed to be allowable over the Masuo et al. and Pacela references. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

N. Asserted Obviousness Rejection of Claim 15

In the outstanding Office Action Made Final, the Examiner rejected claim 15 under 35 U.S.C. § 103(a) as being unpatentable over the Masuo reference as modified by the Pacela reference and further in view of the Fletcher et al. reference. Applicants submit that this rejection is traversed, because this claim is cancelled by the instant amendment. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

O. Asserted Obviousness Rejection of Claims 12 and 14

In the outstanding Office Action Made Final, the Examiner rejected claims 12 and 14 under 35 U.S.C. § 103(a) as being unpatentable over the Masuo reference as modified by the Pacela and Fletcher et al. references and further in view of the Hofmann reference. Applicants submit that this rejection is traversed with respect to claim 14, because this claim is cancelled by the instant amendment.

Further, with respect to claim 12, applicants note that the subject matter recited in claims 12 and 13 has been incorporated into claim 1. Applicants respectfully submit that the proposed combination of the Masuo, Pacela, Fletcher et al. and Hofmann references fails to teach or suggest, *inter alia*, “the first stationary screw line and the second stationary screw line being separated from each other by a predetermined distance and perpendicular to each other,” as presently recited in claim 1. Therefore, applicants respectfully request that this rejection be reconsidered and withdrawn.

P. New Claim

By the instant amendment, claim 68 is added. Claim 68 recites, “wherein the measured response signal is a direct current signal.” No new matter is added, and support for claim 68 can be found in the application as originally filed, e.g., at paragraph [0057]. Applicants respectfully request entry and examination of claim 68.

Q. Rejoinder of Withdrawn Claims

As set forth above, independent claim 1 is believed to be allowable over the cited prior art references. Claim 1 is generic to withdrawn claims 2, 7, 9 and 11. Accordingly, applicants respectfully request that these claims be rejoined, and a notice of allowance be provided therefor.

Additionally, by the instant amendment, withdrawn independent claim 28 is amended to incorporate the subject matter of claims 42 and 43, which are, in turn, cancelled. Claim 28 recites subject matter similar to that recited in claim 1, and is believed to be allowable for reasons similar to those set forth above regarding claim 1. Further, withdrawn claims 29-40, 45, 50, 53-59 and 61-67, which depend from claim 28, are also believed to be allowable.

In view of this amendment, all of the details presented in the subcombination claim 28 are also in the combination claim 1. Therefore, applicants respectfully submit that there is

not longer an evidence claim, and respectfully request that the restriction requirement mailed August 29, 2005, be reconsidered and withdrawn.

R. Conclusion

The remaining documents cited by the Examiner were not relied on to reject the claims. Therefore, no comments concerning these documents are considered necessary at this time.

In view of the foregoing amendments and remarks, reconsideration of this application is earnestly solicited, and an early and favorable further action upon all the claims is hereby requested.

If the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

Respectfully submitted,

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